

1. Regarding the information disclosure statement. The Examiner's comment is not understood. The Information Disclosure Statement referred to only one reference, the TechOptimizer User Guide Version 4.0, a document having 374 pages. A copy of that document was sent with the IDS. Since it is known that the IDS was received, it is evident that the document was also received. If the Examiner is saying that the document is not in the file, then it may have been lost by the PTO. If that is the case another copy will be sent. However, since this document was likely not scanned into the file, it is recommended that the examiner refer to the hard copy of the file. In addition, the cover letter that was sent with the IDS referred the examiner's attention to chapter 2, pp 26-82 of the document. A copy of those pages is attached for the convenience of the examiner.

2. This application was filed with two appendices A and B. Appendix A is a copy of a companion application bearing docket no 03-118 and entitled METHOD FOR PROBLEM FORMULATION AND FOR OBTAINING SOLUTIONS FROM A DATA BASE. Appendix B is a paper entitled Semantic TRIZ™. It is clear that Appendix A was filed because the Published Application No. 2005 0131874 erroneously contains Figs 6, 7, 8, 9 and 10 which are part of Appendix A, but are not part of the body of the present application which contains only four figures, 1-4, which are correctly printed in the Published Application as Figs 1-4. When filed, every page of each of the two appendices, including the figures in Appendix A, was marked "APPENDIX A" and "APPENDIX B" respectively, a copy of each of the appendices A and B is attached for the convenience of the examiner.

The two appendices are referred to on page 13 of the present application, and their content is expressly incorporated into the present application. Since the content of the two appendices have been incorporated into the present application, there does not seem to be any need to refer to them in the IDS. In any event Appendix A is a patent application filed on November 26, 2003 and commonly owned with the present application. Appendix B is a publication authored by the present inventor.

3. Replacement pages of the specification are enclosed that correct typographical errors, including the errors cited by the Examiner.

4. The Examiner found claims 4, 8, 9, 15, 19, 20, 23-33, 37, 41 and 42 as filed indefinite under 35 U.S.C. 112 for the following reasons:

Claim 23 lacks antecedent lines for “the computer program” at line 5.

Claim 4, 15, 20 and 37 lack antecedent lines for “the search result

The rejection of claim 23 is traversed. The purpose of the antecedent rule is to avoid ambiguity, but in this case there is no possible ambiguity. That is because a “specially programmed computer” has a program, that is what it means. It would be overly didactic to contend that a “computer program” does not find antecedent in a “specially programmed computer”. However, if the examiner insists, this claim could be amended to recite, “...formulating by a portion of a computer program in the specially programmed computer...”.

Claims 4, 15, 26, and 37 lack antecedent basis for “the search results”.

These rejections have been cured by amendment to the claims. In this application the terms “responses”, “search responses” and “search results” are synonymous. For example, in Fig 3 the query is submitted to the search system and “search results” are obtained. Then the search results are applied to resolve the contradiction. Also, as shown in Fig 4, the search results are displayed. In the application, at page 4 at line 17, the term “search responses” is used and at line 21 the term “responses” is used and at page 5 line 14 the term “responses” is used and at line 15 the term “results” is used. These all mean the same thing. That is, the search of the data base has a response, a search result, and that is communicated to the computer and then to the output.

Accordingly, claim 1 has been amended to change “responses” to “search results” (it has also been amended to add “for a search” to cure a lack of antecedent). With the amendment to claim 1, the lack of antecedent in claim 4 of “search results” is cured.

Claim 4 has also been amended to recite clarify that the recurrent searching is based on recurrently different specific criteria.

Also claim 12 has been amended to recite “search results” instead of “responses” from the search. This cures the lack of antecedent for “search results” in claim 15.

Also claim 23 has been amended to recite “search results” instead of “responses” from the search (it has also been amended to add “for a search” to cure

a lack of antecedent). This cures the lack of antecedent for “search results” in claim 26.

Also claim 34 has been amended to recite “search results” instead of “results” of the search. This cures the lack of antecedent for “search results” in claim 37.

5. Claims 1, 3, 12, 14, 23, 25, 34, and 36 were rejected under 35 U.S.C. 102(a) as being anticipated by the prior art description (AAPA) in the application at paragraphs 0004-0006.

This rejection is traversed.

The prior art (AAPA) applied by the Examiner is a description of the TechOptimizer product which is also the subject of the IDS. Enclosed is a chart (enclosure A) that is the basic implementation of TechOptimizer consistent with the explanation given in the application.

TechOptimizer is a limited system. A user of TechOptimizer, to express the problem as a contradiction, must select from a specified list of improving features and a list of worsening features (see enclosure A). The software is programmed to respond to the selected combination with a single preselected response as the intersection of a matrix. There is no searching. There is no semantically indexed database.

The description in the application that is applied by the examiner at paragraphs 0004-0006 recites as follows:

*The TechOptimizer software suite includes a database of principles that are useful in solving engineering problems and graphics and associated text that illustrate how those principles had been used in the past to solve similar engineering problems. A user of TechOptimizer software initially has to express a problem as a contradiction by selecting appropriate improving and worsening features from a prescribed list of generic features in order to converge on a suitable contradiction statement and the software responds by suggesting one or more principles that are provided in the software as possible approaches to a solution. The user then selects a principle and the system brings up graphics and text to illustrate various implementations of the selected principle.*

*A user of TechOptimizer software initially has to find the improving and worsening features from the prescribed list of generic features in order to converge on a suitable contradiction. In addition, the system response is limited to forty inventive principles from a table of contradictions as well as few hundred examples of graphics and text suggestions.*

*Referring to figure 1 there is shown the prior art as incorporated in the TechOptimizer product. As an example to illustrate the steps in Fig 1 the problem is to improve a design by increasing the area of one of the design components. When this proposed improvement is implemented, it is realized that an undesirable consequence of the area increase is increase in the volume of the design. The designer would like to avoid the undesirable consequence. If the designer were looking for assistance from a commercially available system (TechOptimizer), he would follow the steps described in Figs. 1-2. In step (1) the user formulates a contradiction by following the prompts "I want to" entering "improve my design", "by" entering "increasing area", and "but there is a problem" entering "increasing volume". This is displayed to aid in the following steps. In step (2) the user submits this contradiction into the system. He does this by selecting from the list of "Improving feature" the one that most closely fits the desired improvement and from the list of "Worsening feature" the one that most closely fits the problem. The matrix has 39 specified improvement features and 39 specified worsening features (for example, an improvement feature, the area of a moving object and a worsening feature, the volume of a moving object). In step (3) the software responds by suggesting one or more of the principles that have been included in the program as possible approaches to a solution. The user then selects a principle and the system brings up graphics and text that have been included in the software to illustrate various implementations of the selected principle.*

*The prior art system for automating and aiding the solution of such problems has the shortcoming that it is limited in the availability of contradiction variables by the matrix of contradictions, a 39 by 39 item matrix. It is further limited in that the Principles are limited in number. Consequently, the user must select the nearest items in the matrix of contradictions, which may or may not be truly on point. In addition the proposed solutions are really only general engineering principles, and in any case are limited to those included in the software.*

Each of the claims 1, 3, 12, 14, 23, 25, 34 and 36 differs from TechOptimizer.

Claim 1 is exemplary. It contains claim elements that are absent from and not obvious in view of the AAPA as follows;

*“inputting into the specially programmed computer a natural language query”*

This is absent from the AAPA because in TechOptimizer all the query choices are already in the computer. As explained, while the user may articulate an appropriate query, only the listed selections are available, so the closest one must be chosen. The user is able only to select one of the listed selections of characteristics to be improved and one of the listed selections of characteristics that is worsening; he is not allowed to enter the actual contradiction that he formulates.

*“ which is a restatement of a contradiction having at least two contradictory elements and having at least two semantic items as part of each contradictory element”*

This is absent from TechOptimizer because the selection of a characteristic that is to improved and a characteristic that is getting worse do not meet the requirement of having at least two semantic items as a part of each. As can be seen from the description, no such requirement is present in the AAPA.

*“Submitting the natural language query for a search to at least one semantically indexed database which is accessible by the computer to search for the semantic items of the query according to the semantic role of the words in the database”*

This element is also missing from the AAPA. Most importantly, there is no semantically indexed database. In TechOptimizer, the choice of an improving and a worsening feature in a matrix results in identification of one or more TRIZ principles that have been previously designated for the matrix intersection. This identifies only general engineering principles. The user then must select one of the TRIZ principles which selection will provide access to materials that have been stored in the computer indexed under that TRIZ principle. The materials may or may not respond to the user's interest and may or may not include the words in the contradiction

much the less the contradiction that the user would actually like to use. In fact there is no way to direct the user's query anywhere except to the previously defined 39 x 39 matrix and then to a TRIZ principle previously placed at the matrix intersection and then to any stored materials designated for that principle. The TechOptimizer database is not semantically indexed. It does not have to be, nor would that be useful. The AAPA is simply a matrix determined from two preselected lists that selects one or more TRIZ principles. The database contents are reference materials generically indexed according to the TRIZ principle.

In the claimed system, the selection of semantic elements in the user's own selected words will direct the query directly to the semantically indexed database. This allows a direct relationship from a query having the user's selected terminology to the database words and therefore to references that use those same words.

In a semantically indexed database, every word is indexed under its semantic category, such as SOA, subject, object or action. With this indexing and by requiring at least two semantic elements in each side of the contradiction, a very targeted search is performed.

Claim 1 has been amended to more exactly describe how the search relates the semantic elements of the query to the semantically indexed words of the database.

Claim 3 depends from claim 1. It defines the search as further including some specific search criterion that will limit the search in addition to the semantic elements. The search criterion limits the search to finding only those responses that also have the search criterion. Examples are given in the description such as calendar periods or any varying criterion that can be used for narrowing the search or for comparing results by recurrent searching. No similar feature is described in the AAPA.

Claims 12, 23 and 34 are patentable over the AAPA for the same reasons as given above with reference to claim 1. These have also been amended for clarification.

Claims 14, 25 and 36 are patentable over the AAPA for the same reasons as given above with reference to claim 3.

6. Claims 2, 13, 24 and 35 were rejected under 35 U.S.C. 103(a) as being unpatentable over the description of TechOptimizer in paragraphs 0004-0006 of the application.

This rejection is traversed.

Each of these claims defines the semantically indexed database as a patent collection. The remarks given above with respect to claim 1 and as also applicable to claims 12, 23 and 34 are applicable to claims 2, 13, 24 and 35.

7. Claims 5, 6, 7, 10, 11, 16, 17, 18, 21, 22, 27, 28, 29, 32, 33, 38, 39, 40, 43, 44 were rejected under 35 U.S.C. 103(a) as being unpatentable over the description of TechOptimizer in paragraphs 0004-0006 of the application in view of Schultz et al.

This rejection is traversed.

Each of these claims is limited to a type of specific criterion.

It is submitted that the basis for patentability as pointed out above applies also to these claims.

A complete listing of claims that includes the amendments discussed above follows.

Also, a separate page setting out amendments to the specification follows.